Quick Start Guide

NXC-ME260-64 NetLinx Master Card

For more detailed installation, configuration, programming, file transfer, and operating instructions, refer to the *NXC-ME260-64* Instruction Manual, available online at **www.amx.com**.

Overview

The NetLinx NXC-ME260/64 Master Card (FIG. 1) and Module is the controller for NetLinx Control Systems. The NXC-ME260/64 (**FG2010-64**) can be installed in the NetLinx CardFrame (NXF), the NetLinx Integrated Controller (NXI), or in a NetLinx Module (NXS-MHS) enclosure.

FIG. 1 NXC-ME260/64 Master Card (front view)

ATTENTION!

*To utilize the latest security firmware features, verify the Master is using the latest released firmware. Verify you are using the latest version of NetLinx Studio (available for download from **www.amx.com**). After the installation of build 130 (or higher) to the on-board Master, Telnet security configuration access becomes disabled.*

Specifications

NXC-ME260-64 Specifications	
Dimensions (HWD):	• 1.5" x 5.0" x 8.8" (45 mm x 127 mm x 224 mm) • 1 rack unit high
Power Requirement:	• 750 mA @ 12 VDC • Power requirements are usage dependant
Memory:	• Compact Flash: 32 MB standard (upgradeable) • Volatile: 64 MB (SDRAM) • Non-volatile: 1 MB • Refer to the NXC-ME260/64 Instruction Manual for more information.
Microprocessor:	• Coldfire 5407 (32-bit)
Weight:	• NXC-ME260/64 only: 0.55 lbs (0.25 kg) • NXC-ME260/64 with NXS-NMS module: 1.95 lbs (0.88 kg)
Enclosure:	• Metal with black matte finish
Certifications:	• FCC Part 15 Class B and CE
Front Panel Components:	• Program Port: RS-232 DB9 connector (male) can be connected to a DB9 port on a PC. This connector can be used with serial and NetLinx programming commands, as well as other DB9 capable devices, to both upload/download information from the NetLinx Studio program. You set the port's communication speed with the Baud Rate DIP switch. There are Program ports located on the front and rear of the Master Card for easy access. Because these ports share the same circuitry, you should never use both at the same time; doing so will result in communication and/or programming errors. • Status: Green LED blinks to indicate that the system is programmed and communicating properly. • Output: Red LED blinks when the Master transmits data, sets channels On and Off, sends data strings, etc. • Input: Yellow LED blinks when the Master receives data from button pushes, strings, commands, channel levels, etc. • Program Port DIP Switch: Internal 8-position DIP switch on the front of the card for setting the baud rate for the Program port.
Rear Panel Connectors:	• Power Port: 2-pin 3.5 mm mini-Phoenix (male) connector. • EXPANSION OUT port: RJ11 connector connects to an AXB-SPE Slave Port Expander. • Ethernet Port: LEDs show communication activity, connection status, speeds, and mode information: *SPD (speed)* - Yellow LED lights On when the connection speed is 100 Mbps and turns Off when the speed is 10 Mbps. *L/A (link/activity)* - Green LED lights On when the Ethernet cables are connected and terminated correctly, and blinks when receiving Ethernet data packets. • AXlink Port: 4-pin 3.5 mm mini-Phoenix (male) connector that provides data and power to external control devices. *Power rating = 6 A max; actual load depends on connected power supply.* • AXlink LED: Green LED indicates the state of the AXlink port. • Program Port:: 5-pin (male) gray connector for system programming and diagnostics. There is a Program port located on the front and rear of the Card for easy access. Because these ports share the same circuitry, you should never use both ports at the same time. Doing so will result in communication and/or programming errors. • ICSNet: Two RJ-45 connectors for ICSNet interface. • ICSNet LEDs - Indicate activity on that port. • ICSHub In/Out: RJ-45 connectors provide data to external Hubs connected to the Master. • ICSHub IN/OUT LEDs - Indicate activity on that port.

NXC-ME260-64 Specifications (Cont.)	
Included Accessories:	• Connector Bag containing: - 2-pin 3.5 mm mini-Phoenix connector (female) (41-5025) - 4-pin 3.5 mm mini-Phoenix connector (female) (41-5047) - 5-pin 3.5 mm mini-Phoenix connector (female) (41-5053) - Back panel (51-2010-61) • Front plate with screws and washers • Quick Start Guide
Other AMX Equipment:	• AC-RK Accessory Rack Kit (**FG515**) • NXF CardFrame (**FG2001**) • NXI Integrated Controller (**FG2101**) • NXS-MHS Module (**FG2009**) • Upgrade Compact Flash (factory programmed with firmware): NXA-CFM64M - 64 MB compact flash card (**FG2116-01**) NXA-CFM128M - 128 MB compact flash card (**FG2116-02**) NXA-CFM256M - 256 MB compact flash card (**FG2116-03**) NXA-CFM512M - 512 MB compact flash card (**FG2116-04**) NXA-CFM1G - 1 GB compact flash card (**FG2116-05**)

Ethernet Ports used by the NXC-ME260-64

Ethernet Ports Used		
Port type	**Description**	**Standard Port #**
FTP	The on-board Master has a built-in FTP server.	21/20 (TCP)
SSH	The SSH port uses SSL as a mechanism to configure and diagnose a NetLinx system. This port value is used for secure Telnet communication. Note: We currently ONLY support SSH version 2.	22 (TCP)
Telnet	The NetLinx Telnet server provides a mechanism to configure and diagnose a NetLinx system.	23 (TCP)
HTTP	The Master has a built-in web server that complies with the HTTP 1.0 specification and supports all of the required features of HTTP v1.1.	80 (TCP)
HTTPS/SSL	The Master has a built-in SSL protected web server.	443 (TCP)
ICSP	Peer-to-peer protocol used for both Master-to-Master and Master-to-device communications.	1319 (UDP/TCP)
integration! Solutions	The feature on the Master uses, by default, port 10500 for the XML based communication protocol. This port is connected to by the client web browser's JVM when integration! Solutions control pages are retrieved from the Master's web server.	10500 (TCP)

Modes and LED Blink Patterns

Ethernet 10/100 Rear Panel LED Patterns		
	Yellow	**Green**
A-activity Receiving Ethernet data packets.	On	Off
L-link Ethernet cables are connected and terminated correctly	Off	On
Speed • Transmitting at 100 Mbps • Transmitting at 10 Mbps	 Off Off	 On Off
FD-full duplex • Full duplex mode • Half duplex mode	 Off Off	 On Off

The following table lists the modes and blink patterns for the front LEDs.

Modes and Front Panel LED Blink Patterns				
Mode	**Description**	**LEDs and Blink Patterns**		
		STATUS (green)	**OUTPUT (red)**	**INPUT (yellow)**
OS Start	Starting the operating system.	On	On	On
Boot	Master is booting.	On	Off	On
Contacting DHCP server	Master is contacting a DHCP server for IP config. info.	On	Off	Fast Blink
Unknown DHCP server	Master could not find the DHCP server.	Fast Blink	Off	Off
Downloading Boot firmware	Downloading Boot firmware to the on-board flash memory. *Do not cycle power during this process!*	Fast Blink	Fast Blink	Fast Blink
No program running	There is no program loaded, or the program is disabled.	On	Off	Off
Normal	Master is functioning normally.	1 blink per second	Indicates activity	Indicates activity

Program Port Connections/Wiring

The NXC-ME260/64 is equipped with two Program ports. One is located on the front panel and the other is on the rear for easy access. The port on the front panel is an RS232 (male) connector and the rear port is a grey 5-pin (male) connector. Use a Programming cable to connect the Program port to your PC's COM port to communicate with the Master card. Then, you can download NetLinx programs to the Master card using the NetLinx Studio 2 software program.

Wiring a power connection

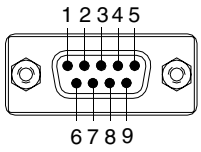
Use a 12 VDC-compliant power supply to provide power to the Master through the rear 2-pin 3.5 mm mini-Phoenix. *Use the power requirements information listed in the Specifications table to determine the power draw.* The incoming PWR and GND cable from the PSN power supply must be connected to their corresponding locations within the PWR connector. Refer to the unit's instruction manual for more detailed wiring connection information.

RS-232/422/485 wiring connector information

The following table shows the pinout and wiring specification information for the front panel RS-232 (DB9) Program Port.

Program Port Connector Pinouts (RS232)

Pin	Signal	Function
1	N/A	Not used
2	RXD	Receive data
3	TXD	Transmit data
4	DTR	Not used
5	GND	Signal ground
6	DSR	Not used
7	RTS	Request to send
8	CTS	Clear to send
9	N/A	Not used



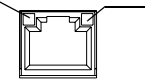
RJ-45 Connections

Use a standard CAT5 Ethernet cable to provide communication between the Master and external NetLinx devices.

Ethernet 10/100 Base-T Connector

The Ethernet cable provides 10/100 network connectivity between the panel and the NetLinx Master (FIG. 2).

L/A - Link/Activity LED lights (green) when the Ethernet cables are connected and terminated correctly.



SPD - Speed LED lights (yellow) when the connection speed is 100 Mbps and turns Off when the speed is 10 Mbps.

FIG. 2 Layout of Ethernet LEDs

Baud Rate Settings

The Program Port DIP switch is located on the card's internal circuit board. For cards installed in modules, you must remove the front panel to access the DIP switch. Use this internal DIP switch to set the baud rate used by the Program port for communication. Use this DIP switch to set the baud rate for the Program Port, according to the settings shown in the following table. Make sure the baud rate you set matches the baud rate on your PC's NetLinx COM Settings before programming the unit.
By default, the baud rate is set to 38,400 (bps).

Baud Rate Settings

Baud Rate	Position 5	Position 6	Position 7	Position 8
9600 bps	OFF	ON	OFF	ON
38,400 bps (default)	OFF	ON	ON	ON
57,600 bps	ON	OFF	OFF	OFF
115,200 bps	ON	ON	ON	ON

Note: *The Program Port DIP Switch is also used to set Program Run Disable (PRD) mode. The PRD mode prevents the NetLinx program stored in the Master from running when you power up the NXC-ME260/64.*

Note: DIP switch 1 activates/deactivates the Program Run Disable Mode. DIP Switches 2,3, and 4 must remain OFF at all times.

Setting the Configuration (Program Port) DIP Switch

1. Disconnect the power supply from the rear 2-pin PWR (green) connector.
2. Set DIP switch positions according to the information listed in the previous Baud Rate Settings table.
3. Reapply power to the unit.

SPE Port Connection/Wiring

Use an RJ-11 cable to connect the NXC-ME260/64 to an AXB-SPE (**FG714**) Slave Port Expander. The EXPANSION OUT port on the rear panel of the NXC-ME260/64 connects to the EXPANSION IN port on the rear panel of the AXB-SPE. You can daisy chain multiple AXB-SPE's by connecting the EXPANSION OUT on the primary AXB-SPE to the EXPANSION IN port on the secondary. ***The connecting RJ-11 cable should not exceed 6" in length.*** *Repeat this process to connect up to nine AXB-SPE's.*

Preparing the ME260-64 for Serial Communication

1. Launch NetLinx Studio 2.x (default location is **Start** > **Programs** > **AMX Control Disc** > **NetLinx Studio 2** > **NetLinx Studio 2**).
2. Select **Settings** > **Master Communication Settings**, from the Main menu, to open the *Master Communication Settings* dialog box.
3. Click the **Communications Settings** button to open the *Communications Settings* dialog.
4. Click the **NetLinx Master** radio button (from the Platform Selection section) to indicate you are working with a NetLinx Master.
5. Click the **Serial** radio button (from the Transport Connection Option section) to indicate you are connecting to the Master via a COM port.
6. Click the **Edit Settings** button (on the *Communications Settings* dialog) to open the *Serial Settings* dialog and set the COM port parameters (used to communicate to the NetLinx Master).
7. Click the **OK** button three times to return to the main application.
8. Right-click the **Online Tree** tab entry and select **Refresh System.**
9. Assign a System Value by using **Diagnostics** > **Device Addressing** from the Main menu.
10. Enable the **Change System selection** by clicking on it and then enter the current and new System values.
11. Click the **Change Device/System Number** button and when finished click **Done**.
12. Select **Tools** > **Reboot the Master Controller** to access the *Reboot the Master* dialog, then click **Reboot** to restart the Master and incorporate any changes.
13. Once the dialog replies with "*Reboot of system complete*", click **Done** and then click the **OnLine Tree** tab in the Workspace window to view the devices on the System.*The default System value is one*.
14. Right-click on the *Empty Device Tree/System* entry and select **Refresh System** to re-populate the list.

Configuring the ME260-64 for Ethernet Communication

Before continuing, complete the COM port steps above.

1. Connect an Ethernet cable to the unit's rear Ethernet connector.
2. Select **Diagnostics** > **Network Address** from the Main menu and enter the System, Device *(0 for a Master)*, and Host Name information.
3. To configure the Address:
   - Use a DHCP Address by selecting the **Use DHCP** radio button, then click the **GET IP** button (*to obtain a DHCP Address from the DHCP Server*), click the **SET IP Information** button (*to retain the new address*), and then finish the process by clicking the **Reboot Master** > **OK** buttons.
   - Use a Static IP Address by selecting the **Specify IP Address** radio button, enter the IP parameters into the available fields, then click the **SET IP Information** button (*to retain the pre-reserved IP Address to the Master*), and then click the **Reboot Master** > **OK** buttons to finish the process.
4. Repeat steps 1 - 5 from the previous section but rather than selecting the **Serial** option, choose **TCP/IP** and edit the settings to match the IP Address you are using (whether Static or IP).
5. Click on the **Authentication Required** radio box (*if the Master is secure*d) and press the **User Name and Password** button to enter a valid username and password being used by the secured Master.
6. Click the **OK** button three times to return to the main application.

3000 RESEARCH DRIVE, RICHARDSON, TX 75082 • 800.222.0193 • fax 469.624.7153 • technical support 800.932.6993 • www.amx.com